KAE

tic *salutes the Dental Hygienist*

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January 1950 — 25c

"They'll never get it off the ground," they said. According to engineering standards, the bee just cannot fly. The wings are too light — not enough span; the body is too heavy; construction definitely is not streamlined.

But someone forgot to tell the bee — it just up and flew away!

In many ways we operate like that bee. Often we've been handed a denture with the warning —"This is a tough one, you may not even be able to do it."

But we just up and did it.

Your difficult cases, as well as your day-in and day-out dentures will get better results at our laboratory because we tackle each case with the idea of doing a good job—better!

Why not try us on your next case?

TIC for Dentists, Dental Assistants and Dental Hygienists

Published monthly by TICONIUM
31 North Pearl St., Albany 1, N. Y.

Annual Subscription, $2.50

Editor, JOSEPH STRACK

January • 1950

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Printed in U.S.A. by
New England Printing and
Lithographing Company, Inc.

Cover artist, Jack Hilton

American Dentistry—in 1950

By ARTHUR H. LEVINE, D.D.S.

IT IS HARD to believe that only about one hundred and fifty years ago George Washington was concerned about losing his one remaining tooth. This last tooth was on the lower left side. The lower denture that Washington wore was almost like a full denture, except that it had an opening through which the lone tooth protruded. Perhaps the limited usefulness of dentures designed in those days made Washington hesitate to part with his last natural tooth. In the end, however, he finally had to give in and lose it.

The ground gained in dental practice in the last century and a half has been so vast as to make it appear almost incredible that it should have been won in so short a time. It would seem that after such an initial burst of speed American dentistry would now be settling down to a walk. But this is not the case. Modern dental science is moving ahead rapidly, and shows no signs of slowing down. At the beginning of a new year it is well to look back and take stock of what has recently been accomplished and to look forward for a glimpse of the promises ahead.

By far the biggest problem of the year is dental caries. Tracking down its cause and its insidious workings still constitutes the biggest sleuthing job in dentistry. It was number one on the research agenda for last year and remains in that position for 1950. With it are tied up all the new methods of caries-control, such as fluoridation of public water, local application of sodium fluoride, employment of Gottlieb's impregnation technic, use of ammoniated dentifrices, and control of carbohydrate intake. The year 1949 brought a wide public acceptance of locally applied sodium fluoride, as well as the ammoniated dentifrices. By the end of 1950 it may be possible to evaluate some of the results.

Exactly what takes place when a tooth decays is still not known. The primary invasion of the enamel, the initial carious lesion, is the stumbling block. Many investigators believe that a decalcification of the enamel surface takes place. Why does this decalcification take place? Because of an acid environment of the enamel.

Today, investigators believe that children brought up in communities with adequate amounts of fluorides in the water develop an enamel that is more resistant, that is, less soluble, to the acids associated with the process of decay. Likewise, local application of sodium fluoride is believed to protect the enamel against the big enemy, the acids. In the last analysis, however, no one actually knows how the fluorides work.

One dissenting voice in the acceptance of the acid-decalcification theory is Bernhard Gottlieb. He does not believe that the first step is decalcification. In his opinion the first carious lesion is proteolytic, that is, it causes a splitting up of proteins. This, in turn, is assisted by an invasion of micro-organisms into the lamellae of enamel. Anything that can stop this invasion, therefore, should stop dental decay.

On the left: The first appearance of the now-famous "pretty girl in the toothpaste ad," s to The Bettman Archive. Published in 1818, this picture was "the first representation of a toot Verse which appeared below the picture read:

"Take great care of your mouth each day,
Dirt and tartar chase love away,
But when everyone sees your teeth so white,
All hearts will succumb to your sweet light!"

Above, center: The Bettman Archive legend reads, "A fakeress who is bound to take No. 1. teeth-cleaning operations that make plenty of business, and scores of candidates w be hugged."

Above, right: "The toothwash vendor in New York, 1883."

Hence, Gottlieb's Impregnol – which is, essentially, a combination of chemical solutions that precipitates a block in the path of the micro-organisms which play a part in the process of decay.

As far as the Council on Therapeutics of the American Dental Association is concerned, the effectiveness of preparations in the impregnation technic has not yet been established. But the Council is willing to look at any new evidence whenever it becomes available.

In the case of local application of sodium fluoride, however, the Association has officially gone on record as favoring its use. A preponderance of successful experimental work was the influencing factor.

But again, final proof of the effectiveness of these applications rests in the hands of the dentists throughout the country. This year should begin to show some of that final proof.

Similarly, the advantage of adding fluorides to the drinking water, called fluoridation, cannot be demonstrated adequately until the experiments that have been carried on for years in certain communities are evaluated. Fluorides have been added to the water in Brantford, Ontario; Evanston, Illinois; Grand Rapids and Midland, Michigan; Newburgh, New York; and Sheboygan, Wisconsin.

As for ammoniated dentifrices, it is much too early to draw any sound conclusions. A rough idea of how much of it is being sold, however, can be gained by the fact that one manufacturer alone, last year, paid $100,000 in royalties.

Dental Research

MICHIGAN WORKSHOP

It is hoped that this year will bring more research efforts along the line of the Michigan Workshop. That prospect is one of the brightest spots on the dental horizon. Organized by the School of Public Health at the University of Michigan for the purpose of evaluating measures for the control of dental caries, the Workshop brought together qualified dentists, physicians, biochemists, dental educators, and specialists in nutrition.

The findings of the Workshop brought order to statistics and theories that had long been disorganized. Old beliefs concerning dental decay were shattered. The investigators found no evidence that nutritional status had any bearing on the caries process. Nor, in fact, did general health, or sickness. Actually, some reports showed that malnourished persons had a lower incidence of dental decay. The Workshop did not question the importance of eating well but it did put to rout once and for all the belief that good teeth were synonomous with good food. Mothers are still heard to ask, "Why does my child have so many cavities? I give her the best food and she drinks a quart of milk a day."

The question of pregnancy and its relation to

dental decay was also settled. For years many patients and dentists believed that accelerated decay and pregnancy went together. You still hear it: "I guess I'll lose another tooth with this child." But the Workshop found that pregnant women did not have a higher rate of caries than did comparable nonpregnant women. Nor was it found that pregnant women needed more calcium than was supplied by a diet adequate to meet total nutritional requirements.

Startling, too, was the admission that there was little scientific evidence that a reduction in the caries attack rate could be expected from a toothbrushing program. Even the habit of chewing gum, which is frowned upon by many dentists, was finally considered neither harmful nor beneficial.

Due to the complexity of problems confronting dental research, it is important to enlist the aid of many branches of science. The Michigan Workshop is a successful example of such cooperation in action.

Many private and university research groups recognize the importance of the concerted effort and are working accordingly, doing admirable work. The National Institute of Dental Research is doing an excellent job in coordinating the many special branches of sciences. *(Editor's Note:* See "Rx for Living," this issue.)

Dental Education

This year is the first year since the war that the dental schools are back to normal so far as the number of dental graduates is concerned. The class of 1950 will probably number about 2,600; last year the figure was 1,550. It is estimated that the total of graduates will increase slightly each year until the number reaches 2,750, at which point it may remain fairly stationary. This estimate does not take into consideration the possibility of new schools.

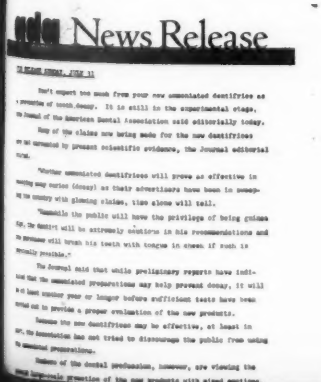
It is interesting to note that the gradual increase of graduates from an estimated 2,600 this year to 2,750 in subsequent years will be due, in part, to greater selectivity exercised in the formation of the freshman class. It is becoming increasingly difficult to enter dental schools. The number of applications is far in excess of the number of vacancies, the ratio usually ranging from three to one to four to one, and even greater. Of 1,500 who wanted to enter New York University, for example, only 120 were chosen. The inevitable result of this situation is greater selectivity.

Since the man who finally enters is a superior student, the chances of his being dropped are slim. The 38 accredited dental schools in the country accept about 3,100 freshmen under normal conditions. If, from this group of 3,100, the colleges finally graduate about 2,600 this year, as predicted, it means that 500 men who started will fail to finish. But each year, as the demand for entrance into dental colleges exists, the entering student becomes more proficient. As a result, that mortality number of 500 will decrease and more students will remain in school to graduate. Thus the reason for the estimated increase from 2,600 to 2,750. Evidently 2,750 graduates from 3,100 matriculants, what with withdrawals and failures, is about as close to pedagogical perfection as the colleges can get.

Let us now look at these recent graduates as they will enter practice and will become a part of the 87,000 dentists serving 148,000,000 poten-

At the right: A modern toothpaste girl. The legend accompanying the picture says, "Sparkling healthy teeth are part of Pat Fair's gracious heritage, and she knows how to defend it by keeping her teeth free of disfiguring grey 'plaque' with an ammoniated dentifrice. The Amm-i-dent powder she uses will give her protection against decay, too."

Below, center: A publicity story headlined, "New Products Reduce Rate of Tooth Decay." Lower left: A press statement from the American Dental Association which says, "Don't expect too much from your new ammoniated dentifrice as a preventive of tooth decay."



News Release

Don't expect too much from your new ammoniated dentifrice as a prevention of tooth decay. It is still in the experimental stage, the Journal of the American Dental Association said editorially today.

Many of the claims now being made for the new dentifrices are not warranted by present scientific evidence, the Journal editorial says.

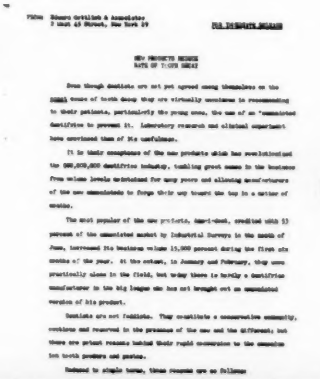
"Whether ammoniated dentifrices will prove as effective in warding away caries (decay) as their advertisers have been in scaring the country with gleaming claims, time alone will tell.

"Meanwhile the public will have the privilege of being guinea pigs. The dentist will be extremely cautious in his recommendations and the layman will brush his teeth with tongue in cheek if such is mentally possible."

The Journal said that while preliminary reports have indicated that the ammoniated preparations may help prevent decay, it will be at least another year or longer before sufficient tests have been carried out to permit a proper evaluation of the new products.

Because the new dentifrices may be effective, at least in part, the Association has not tried to discourage the public from using the ammoniated preparations.

Members of the dental profession, however, are viewing the over-hopeful promotion of the new products with mixed emotions.



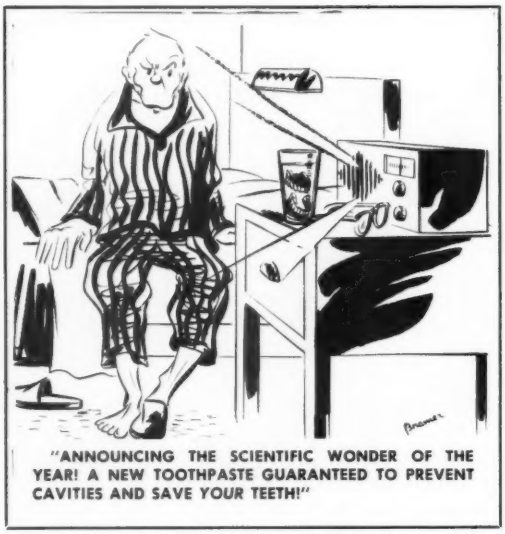
Even though dentists are not yet agreed among themselves on the exact cause of tooth decay they are virtually unanimous in recommending to their patients, particularly the young ones, the use of an "ammoniated" dentifrice to prevent it. Laboratory research and clinical experiment have convinced them of its usefulness.

It is their acceptance of the new products which has revolutionized the $80,000,000 dentifrice industry, enabling great names in the business from volume levels maintained for many years and allowing manufacturers of the new ammoniateds to forge their way toward the top in a matter of months.

The most popular of the new products, Amm-i-dent, credited with 53 percent of the ammoniated market by Industrial Surveys in the month of June, increased its business volume 15,000 percent during the first six months of the year. At the outset, in January and February, they were practically alone in the field, but today there is hardly a dentifrice manufacturer in the big league who has not brought out an ammoniated version of his product.

Dentists are not reckless. They constitute a conservative community, cautious and reserved in the presence of the new and the different, but there are prime reasons behind their rapid conversion to the ammoniated tooth powders and pastes.

Reduced to simple terms, these reasons are as follows:



"ANNOUNCING THE SCIENTIFIC WONDER OF THE YEAR! A NEW TOOTHPASTE GUARANTEED TO PREVENT CAVITIES AND SAVE *YOUR* TEETH!"

tial patients. Is there a need for them, a place for them; or will they start crowding the men already in practice?

Under normal circumstances, the number of dental graduates is greater than the number of dentists who die and retire. Approximately 2,000 dentists are lost each year because of death or retirement. Therefore, counting on a graduating class of 2,600 in 1950, it will mean that 600 additional dentists will be in the swim. And, as was pointed out earlier, that 600 will increase each year to about 750, which is considered the leveling off figure, unless new facilities are created.

On the face of it, it would seem that the dental profession is going to be overcrowded. But actually this is not the case. First of all, the number of patients is constantly increasing, as the population increases. In the last ten years it rose by 16,000,000.

But what is more significant is the fact that each year more and more people are becoming educated to the importance of dental services. It is difficult for some of us to realize that there are countless numbers of people who have never been inside a dental office. The war provided a strong impetus in educating some of the men who had never received treatment before. They, in turn, went home and helped spread the gospel. The process is slow but it is continuous.

Specialization

In the second place, many dentists are going in for specialization. For a long time there was only one specialty board. Now we have five: orthodontia, oral surgery, pedodontia, periodontia, and prosodontia.

It means that more men are leaving the ranks of general practice to go into a specialty, thus making more room for the recent graduates. Incidentally, the increase in the number of specialists brings more highly skilled services to communities that never enjoyed them before.

Distribution of Dentists

Another fact that helps the man who graduates this year is distribution. For many years now there has been a preponderance of dentists in the populous areas; but the year 1950 still finds some states in which entire counties have no dentist. On student bulletin boards in dental schools it is not uncommon to see half a dozen letters begging someone to start a practice in a certain community. Even in New York State, which boasts of almost 14,000 dentists (more dentists than are found in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia combined), a small community of about 4,000 sent out an S.O.S. because it did not have a dentist. A young dentist saw the appeal and got in touch with the president of the Chamber of Commerce, which assured him that he could gross about $10,000 the first year. The young man was skeptical. He explained that he was more interested in guarantees than in assurances, and asked for a guarantee of $7,000. They gave it to him.

True, some men prefer to be near hospitals and centers of learning. But with roads and means of transportation being what they are today, the field has broadened tremendously. Why should a man expose himself to the kind of competition that exists in New York State, where there are only 1,029 persons per dentist? He can go to Delaware, Vermont, Maryland, Maine, Oklahoma, or Idaho, where he will find more than 2,000 persons per dentist. Or he can start in Texas, Tennessee, New Mexico, Georgia, Kentucky, or North Carolina, where there are over 3,000 persons per dentist. And if he is looking for 4,000 or more persons per dentist, Arkansas, South Carolina, or Mississippi will interest him.

State Boards

This brings up the problem of State Boards and the National Board. What hope does the new year hold for improving the unfortunate situation that exists today in regards to State Boards? The difficulties arising from the fact that a man is considered qualified to practice in one state but not in another, are too many to enumerate. Everyone is familiar with the plight of the man who, for health or other reasons, wishes to move to another state, only to find that, in all probability, he will never pass the State Board examination. Some states feel that they are protecting their own dentists by barring outsiders. This engenders nothing but antagonism among the states.

A National Board of Examiners does exist, and any eligible candidate may take the Board's examination. But most of the graduates feel it is a waste of time, for only twenty-two states accept the certificate of qualification from the National Board. In the medical profession, the reverse prevails: all but four states accept the medical certificate of qualification.

As far back as 1926 the Carnegie Foundation for the Advancement of Teaching issued a bulletin on dental education in which it urged uniform national examinations. In 1928, the National Board of Dental Examiners was organized. Since then its progress has been slow, primarily because some states believe that their power would be usurped if they accepted the Board's certificate. Reciprocity among the states is not the answer either, for most states will not trust their neighbors. Only a small fraction of the states and the District of Columbia have entered into reciprocal relations.

Obviously, a national system is the only solution. A few of the states see it that way now. It is hoped that, by the end of this year, more states will join. If the American Medical Association has accomplished approximately seventy per cent participation, there is no reason why a similar success cannot be achieved by the dental profession.

The Outlook for 1950

As far as income is concerned, this year holds out hope both for the general practitioner and the specialist. Barring an economic catastrophe, or world upheaval, business should be good. A tremendous backlog of needed dental services still remain unsatisfied. Needless to say, if everyone who wanted dental services actually went to a dentist, we would be swamped. Fear, lack of money, and a dozen other factors, however, keep the flood down to a comparative, steady trickle. Modern methods of practice are overcoming some of those obstacles.

The dentist was very much in the limelight last year and will probably continue to be this year. One of the factors responsible for this was the wide publicity given to the local application of sodium fluoride, as well as the fluoridation experiments carried out in certain communities. Another factor was the advertising campaigns of the manufacturers of ammoniated dentifrices. The full-page advertisements in newspapers and magazines that were splashed across the nation reached every corner of the country. Never before in the history of dentifrice advertising has so much space been bought. One manufacturer alone, and he a small one, had an advertising budget last year of $2,000,000. This is less than dental education, but it is helping to make millions of persons tooth-conscious. It is impossible to face such a sustained barrage of publicity without thinking of teeth. And when a person thinks of teeth he is well on the way to thinking of a dentist and the services dentistry has to offer.

All factors considered, it looks like a good year.

"WEDNESDAY? . . . FRIDAY? . . . SATURDAY? . . ."

The Constant Need for Dental Radiology

By C. L. MEISTROFF, D.D.S.

THE OMISSION OF RADIOLOGY in dental procedure is the most common, and unwarranted, breach of practice. It robs both the patient and the operator of the proper diagnosis on which to base necessary treatment. It stamps the operator, in the eyes of the patient, as careless and irresponsible, and as one who is interested solely in short cuts, hurry-up procedures, and half-way work.

The question arises – is radiology necessary in every case? The answer is unequivocally and irrevocably *yes*. Even if the patient has been edentulous for the past ten years, has never worn dentures, and has come to you for his first set. Why? Because it is you who will have to endure the embarassment and humiliation if and when an impacted tooth shows up, buried roots, or a cystic process starts in to fistulate under the dentures.

X-rays Insure Accuracy

X-rays are like insurance; they safeguard the present and the future. If nothing is revealed, so much the better. All guesswork is completely eliminated. Professional accuracy gives treatment precision, which in turn engenders a reliable practice. Radiology is the magic wand which bequeaths to modern dentistry sub-surface eyes and places both patient and practitioner on the same plane of mutually related and enjoyed confidence and surety. Carelessness, unnecessary complication and unmitigated speculation are all ruled out.

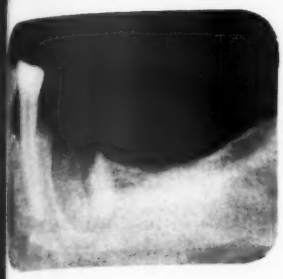
The ability to properly radiograph, coupled with faultless interpretation, provides the patient with the best the conscientious operator has to offer in his art, and the operator can unhesitatingly proceed with his work because his diagnosis is secure.

The role played by radiology in dentistry cannot be placed subservient to, or after, anything else that transpires in the office. By this I mean omitting radiology in favor of shortcuts, time-savers, and other fee-reducing methods because the patient may think X-rays are fee-padders; or of economizing by using cheap films and processing fluids. The X-ray machine is active equipment and not a space filler or an awe-inspiring accessory. The dentist should use it routinely, and the dental assistant should know its workings and be able to assist.

How X-rays Help

Why so much to do about X-rays? Because their employment in patient care insures present treatment and eliminates future untoward events. For example, the tooth in question is very loose, but can you see the sharp curve or the hooked apex? It may even be hypercementosed, and with a fibrosed ball and socket joint. The cavity is incipient but almost near the pulp: what does the apex show? Why bother to fill that lone occlusal pit or fissure at the distal when the entire mesial contact area is undermined to completion? X-rays would show this up and the operator would be better prepared for proper approach and correct restoration. Otherwise, the patient may return some months later and blame his aches and pains on the filling that the dentist inserted and not on the unseen cavity that the dentist's carelessness permitted to remain and condemn both tooth and filling. Who is to blame? What is happening under that occlusal amalgam in the lower right second molar that still makes it ache slightly? Was it the explorer catching that led you to fill it, or were you just too indifferent to radiograph and learn if it might have been impaction pressure instead? Don't you wish you could really know? Isn't it easier to X-ray first, rather than tackle that second upper left molar, crack off the crown, and ram one of the roots into the antrum? Can't you remember the hours of agony spent in getting one out, or trying to?

No one would think of building a house without a firm foundation and a set of plans. The same relation exists between dentistry and radiology. How can anyone proceed blindly with the removal of any extraction, impaction, bridgework or individual restoration without first knowing the condition of the immediate structure or surrounding tissues? What you see, you know; what you don't see, find out. X-ray! Even in periodontal treatment, removal of calculus and X-raying afterwards serves as a check on the possibility of calcular spicules or spurs remain-



X-rays taken prior to extraction, nor any
r. Retained root, fractured alveolus and
mpacted second bicuspid.

Patient informed nothing was visibly wrong. Observe deep caries in second molar. Note completely impacted third molar that was responsible for pressure neuralgia. Pulp involvement added considerably to the pain.

Patient in severe pain. Was told nothing was visibly wrong, X-rays not necessary. Other cavities could not be seen orally.

ping from adjacent teeth, second molar
uld not have been removed for pyorrhea.
mpletely impacted third, not even visible
r extracting second molar, with distal
nal infection, was still productive of neu-
ic pains five days after.

No X-rays taken. Patient told nothing was wrong. X-rays revealed complete alveolar destruction of first molar.

No X-rays taken at any time during work. Teeth ground for occlusion. Patient told nothing was wrong. Observe complete alveolar destruction. Case less than eighteen months.

X-rays taken at any time during treatment.
algams situated directly over pulps. Im-
sions taken next day for stainless steel re-
vable bridges.

Teeth had to be removed sixteen days later. Patient was told pain was due to occlusal stress, and had to "get used to it."

No X-rays taken during treatment. Amalgam intrudes on pulpal horn. Patient in severe pain. Told it was not unusual when large filling is put to place.

ient complained of soreness and pressure.
d nothing was wrong. X-rays not at all ne-
ary.

No X-rays deemed necessary. Patient told nothing was wrong. X-rays revealed caries in completely impacted third molar. Observe also caries in second molar at distal contact.

No X-rays taken at any time. Patient was silicates needed replacing, and that pain due to leaky margins.

ing in out of the way or inaccessible places that may have been missed at the first visit.

Common Sense Rules

The instrumentality by which dentistry is endowed through radiology is best appreciated by observing some hard and fast common sense rules. There are many but the few enumerated herewith cover most of the more delicate aspects:

Don't take X-rays indiscriminately and solely for building up a fee. Many patients sense this after the first consultation and rebel inwardly. How do they know? By the importance, or lack of it, that you attach to the X-rays and how you use them in the consultation.

X-rays do not reveal everything; they are one of the many links in the chain of findings that make up the diagnosis. The interpretation is one of these.

Don't prophesy before the films are taken. If you are that good, why take films? Guesswork with the films is as bad as guesswork without them.

Place no limit on the number of films needed. Information is based on what they reveal, and not on their economic rationing.

Develop the films as soon as taken and while the patient is still in the office. Retakes cannot be made with the patient gone. The next visit should be for checking the films against the oral findings, and not to take additional films and have the patient return later. Half a consultation is worse than none at all.

Check the films and the mouth at the following visit and discuss the findings with the patient as regards treatment to be given, work to be done, fees to be charged, and the method of payment. This is important as it lays the groundwork for the whole case and course of procedure.

Have the films nicely mounted and on a viewing-box. Don't hold them up singly to the window or operating light. Get additional detail with a magnifying glass. Only you can help the patient feel that the money has been wisely expended for this phase of treatment. A critical interpretation and analysis, with sufficient explanation to the patient, shows honest effort and a conscientious attitude to the patient. They all need the rudiments of dental education for laymen and this is a good time and place for you to provide those fundamentals. Take the time and trouble to explain, to show, to help bring about understanding, so the patient doesn't think the X-ray phase is just so much bunk. The patient's dental welfare is the dentist's job, and radiology helps him to do it better.

If there are certain phases of practice that you do not cover, make a complete report and outline what should be done before referring the patient to a qualified operator.

The cases pictorialized here are exemplary of what happens when guesswork is the rule and radiology is the exception. Their individual themes are self-evident and self-explanatory.

What Dentist and Patient Should Know About X-rays

DENTIST:

Keep abreast of all technical development. This will help you to do the best work.

Know thoroughly the limits and characteristics of your machine.

Antiquated equipment does not possess the safety and personal protection of modern appliances.

Never, under any circumstances, hold the film for the patient.

Stand in back of the machine, behind a lead glass screen or away from the tube end.

Always keep a film with an attached paper clip in your pocket; develop in about two or three weeks and so keep a check on stray radiation or inadvertent exposure due to carelessness.

Do not continually expose one area over an extended time; you might burn the patient. Some are more sensitive than others.

Have your assistant trained to operate the machine when you are out of range.

Know what you are interpreting!

PATIENT:

Should inform the dentist when last X-rayed and the extent of the work — full mouth, laterals, single films, or do-overs.

Should tell the dentist if he is being treated with X-rays at the time of visit, so that the dentist can contact the patient's physician for detailed information.

Should advise the dentist if extreme sensitivity to exposure exists.

Co-operate at the time of X-raying. This means less films to do over and less time for radiology exposure.

A New Year's Message

By MAURICE J. TEITELBAUM, D.D.S.

CHARLIE and I were having lunch together that Thursday afternoon. Before the waiter brought in our first course, the conversation turned to the inevitable.

"Yeah, it's a tough life." Charlie was talking and I was listening.

"Yeah, it's a tough life," he repeated. "I tell you, life is just one crisis after another. You work and work, and what have you got to show for it? The same bills – the same financial worries."

"Maybe it's living beyond our means," I offered. "You know, trying to keep in the race with the others. Tell me something, Charlie – where are we running to? Where are we heading?"

"You've got me," he replied. "But I'll tell you something. I'm making more money now than I ever did. I'm in practice twenty years – and I've got the same headaches I had fifteen years ago." Then he laughed. "And what a day I had today! A partial cracked in the same place for the third time. A bridge I put in loosened up. And I had an extraction this morning that was a lulu. It was one of those long cuspids – "

Just then the stranger came over to our table. He seemed short and at the same time tall. And although he was stocky, he gave the appearance of being lithe and agile. I can't remember much about his face, except that it had one of those kindly, angelic expressions.

He asked if he could join us. I didn't want him at our table and I'm sure Charlie felt the same way, but somehow we couldn't say no. He must have sensed it, because, as he seated himself, he told us that he was just staying for a moment and that the waiter was bringing his dessert over to our table.

Now, maybe he looked angelic, but he wasn't bashful at all – not the least bit. From the time he sat down, Charlie and I didn't say a word. Why? Well, this guy who invited himself to our table didn't give us a chance, that's why. And what's more, he must have gotten the trend of our conversation because he really started to tell us off plenty.

"The trouble with you two," he said, – "and it's the trouble with the whole bunch of you – you haven't made a science of living. Sure, I know – you make beautiful teeth and you've built machines so you can swim the ocean like the fish and soar over the clouds like birds. But tell me something – " He paused. "When are you going to learn to walk the face of the earth like human beings?"

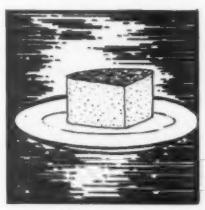
Charlie started to say something but the stranger was right back at us. "You should be working less and living more. This should be an age of cultural advancement, of good living, of luxury. Instead, you've made it an age of uncertainty, insecurity, fear, dog-eat-dog."

Charlie was upset. He'd had a hard day and he just wasn't in the mood to have anyone tell him off. Besides, the truth hurt. "What's your solution, wise guy?" he challenged.

The stranger stood up and smiled. It seemed to us it was one of those know-it-all, patronizing smiles. "Where I come from, we don't have any rat races," he said. "So we don't need any solutions. That's your problem." Then he turned and left as suddenly as he had appeared, without waiting for his dessert.

I looked up at him as he passed through the revolving doors. His shoulder blades seemed hunched and bulky, and I thought I saw long feathers protruding from beneath his short black coat.

Then the waiter brought over his dessert – angel cake.



R for Living

DR. H. T. DEAN — PUBLIC HEALTH OFFICER

By JOSEPH GEORGE STRACK

THE SHAPE of things to come in dentistry is now being projected in research units which are being augmented all over America.

For the first time in history, a coordinated, nation-wide attack on dental disease is under way.

More resources are being devoted to dental research today than ever before, inadequate as those resources still are.

From the painstaking, protracted labors of trained scientific investigators will come the better dentistry of tomorrow, a recasting of our dental economy, and improved dental health for the human race.

Dentistry is marching on the research road toward prevention.

A key man occupying a top position in this history-making program, and helping to make some of the history himself, is fifty-six-year-old, ex-Army captain, public health veteran, researcher H. Trendley Dean. Administration-wise with twenty-nine years spent in the U.S. Public Health Service; director of dental research at the National Institutes of Health since the beginning of that program in 1931; and former president of the International Association of Dental Research and of the Association of Military Dental Surgeons of the United States, Dr. Dean is unusually well equipped to guide the destiny of the new National Institute of Dental Research, of which he is director.

When young Dean obtained his D.D.S. from St. Louis University in 1916, he scarcely had time to make plans for opening his dental office. World War I came within a matter of months. He joined the U.S. Army Dental Corps, and had a lot more patients than he expected to have for his first year in practice. The oral conditions he found in thousands of otherwise healthy young men made a profound impression upon him. In those days there was little data on the prevalence of dental disease, and many dentists, including the East St. Louis-born Dean, had a great deal of first-hand evidence of oral pathology forced upon them. Like all born researchers, Dean determined to learn all that he could about the basic causes of dental caries and periodontal disease. He had a professional's regard for treatment and care, but he also had a researcher's vital curiosity about the fundamental causative factors which produced so much poor dental health. And he wanted to play a part in striking at dental disease by coming to grips with it at its source.

Opportunity for Research

He got his opportunity in 1921, and joined the U.S. Public Health Service. For ten years he served in U.S. Marine Hospitals throughout the country, where he dealt with thousands of patients, had adequate case histories at his disposal, and was able to observe closely the incidence of disease and to assemble and collate data himself.

He made epidemiological study of dental disease his specialty, and became the chief authority on dental research for the Service. When dental research began at the National Institutes of Health in 1931, the natural choice for director of research was the Service's top dental epidemiologist – the pioneering, thirty-eight-year-old Dr. Dean. When the National Institute of Dental Research was established in 1948, Dean realized the dream of a lifetime, and dentistry won recognition that was long due it.

In his first meeting with the twelve national leaders in scientific inquiry, dentistry, medicine, education and public affairs who constitute the National Advisory Dental Research Council – the body which serves as the chief consultative group to the Dental Institute – Director Dean said:

"Our research institutions are devoting more than one hundred times as much money to medical research as to dental research. That million-dollar figure for dental research represents about one-tenth of one per cent of the amount paid to dentists for remedial services. But the 110 millions devoted to medical research represents more than 6 per cent of the amount paid to physicians for medical services."

Thus, with a few simple economic statistics Dr. Dean dramatized the situation of dental research in America. And he began, at once, the job of doing something about it – on a variety of fronts. The Institute extended considerably its own program of intramural research, authorized grants to other institutions to conduct expanded dental research, and established a program of research fellowships.

The Institute's Program

Today the Institute is conducting studies in the fields of epidemiology, bacteriology, biochemistry, and biophysics, through its own staff and through a network of dental schools, universities, hospitals, laboratories and other institutions, and through individual researchers working through grants. None of these activities involve duplication. All of them mean additional, new research; and, through the provision of fellowships, new, qualified personnel are being trained for research – the greatest single need in dentistry today.

In the Institute's own laboratory at Bethesda, a staff of thirty-seven persons is at work. They include ten commissioned officers, five each from the reserve corps and from the regular corps of the Public Health Service; the civil service personnel include five professional staff members, twelve sub-professional, and seven clerical; and a unit of the American Dental Association – a dentist, a master of science, and an additional Ph.D. in bacteriology – completes the Institute's research section.

At present, work is under way in investigating the chemistry of dental tissues, and the possibilities of increasing their resistance to dental caries attack; in the various microbiological forms found in the mouth; in the composition of saliva, and the factors which may influence its composition; and in epidemiological studies. Another field of investigation is concerned with the possible relationship of the citric-acid content of human saliva and erosion. Exploratory work is also being done to determine the decay-inhibiting qualities, if any, of such substances as penicillin,

Below: Dr. H. Trendley Dean, Dental Director, USPHS, and Director, National Institute of Dental Research.

Opposite page: Researchers of the Institute are studying the influence of dietary factors on the growth and metabolism of oral bacteria. In the foreground Dr. Robert M. Stephan, Senior Dental Surgeon, is recording results of the auxanographic method for determining the effect of various substances on the growth of bacteria and the ability of the bacteria to produce dissolution of tooth salts. In the background (right) is Miss Rachel Harris, biochemist, operating an apparatus developed by Dr. Stephan to measure rapid pH changes produced by oral micro-organisms from glucose under simulated oral buffer conditions. Mr. Frank Shaw, biological aid (left), is measuring out ingredients for media.

Senior Dental Surgeon Francis A. Arnold Jr. USPHS, and Associate Director, National Institute of Dental Research.

iodine compounds, and nitrates. Through the electron microscope and other visualizing instruments and techniques, the tooth surface structures are being studied. The fluorine-dental caries hypothesis relating to the mass control of dental decay is being tested on a large scale.

Expenditures for the intramural studies at the N.I.D.R. total $212,000 annually; and nineteen institutions are collaborating, with thirty-six separate projects under way, through the provision of the research grants, which amount to approximately $200,000.

All of these activities reflect the most comprehensive approach and the first coordinated attack yet made on dental disease. This realistic program makes it possible to use existing dental research facilities, to create needed new facilities, and to integrate these varied efforts.

Director Dean, a realist by scientific discipline, by broad experience, and by breadth of intellect, is, significantly, optimistic about the Institute's program. He puts it this way:

"We are making it possible for the total resources of dentistry to be applied to the tremendous problems of dental diseases on a scale never before possible. This is, in a very real sense, dentistry's own program, with dentists participating in policy-making and in program-planning; with dentists supervising and directing research projects; and with dentists doing actual research themselves.

"I'm no prophet, but I believe the Institute's work will help to achieve a balance between the prevention phase of dentistry and the care and treatment phase, an imbalance which has too long been the profession's chief weakness as a medical science. Only during the last ten or fifteen years has dentistry felt the impact and stimulation of basic research. Development of this neglected field — fundamental to a successful control program — may, in all probability will, markedly change the practice of dentistry a generation hence, and perhaps before."

Research Investigators Needed

Dr. Dean was asked what he would urge upon American dentists if he could sensitize them to what he considers to be the major problems and responsibilities of dentistry. He answered promptly:

"The development of basic research, fundamental and background, is seriously handicapped by the very limited number of dental investigators with graduate training in the basic sciences. The expansion of research and the improvement of teaching are dependent upon the early correction of this critical shortage in trained scientific personnel. This fact, above all, would I try to impress upon American dentists."

In other words, the dental health of the American people and the progress of dentistry itself rest, to a substantial degree, upon the availability of an adequate number of trained research investigators. It is dentistry's responsibility to

Above, left: A collodion replica being removed from a tooth surface [illegible] metal shadowing. The fine detail present on the tooth surface is rep[illegible] in the collodion which, after proper treatment, can be observed [illegible] light microscope.

Above, right: Fine details of tooth structure revealed. The electron mi[illegible] with its higher magnifying power is providing much new informatio[illegible] the fine details of tooth structure which it was not hitherto possible to [illegible]

provide such key personnel. Here, surely, is an opportunity for young dentists and dental students with a flair for scientific investigation and the desire to make sorely-needed contributions to dental science.

H. Trendley Dean, it might be said, has the greatest responsibility for the dental health of a people that has ever come to one man. With a soldier's training in taking orders and an officer's experience in giving them; with a research scientist's impeccable regard for facts; with a dentist's sound concept of the possibilities of his profession; and with a seasoned administrator's dominant concern for coherence, integration and productivity in organization effort, Director Dean accepts his responsibilities with understanding, cheerfulness, and a self-effacing approach one might expect from a man with his unique background and excellent training.

Gorgas Award Winner

He is equally at ease whether projecting high public policy before a council of the nation's top health authorities, directing the national network of the Institute's activities, or personally supervising a research project at Bethesda. He

Biochemist Harris and the apparatus developed by Dr. Stephan to measure rapid pH changes.

All photographs illustrating this article were made by the Photo Service and Research Section, National Institute of Health.

managed to get away in the fall and winter of 1945-1946 from his job as director of dental research of the National Institutes of Health to do some epidemiological studies of Vincent's infection at Frankfurt, Germany, for the Office of Military Government, USFET.

His leadership is of the most effective kind, that which exercises itself without anyone being conscious of it. Except for releasing factual information about the Institute's activities, he rigidly enforces a non-publicity policy. No personal publicity is issued about any member of the staff. This has led to anonymity, so far as the general public's knowledge of Dean is concerned. But the national spotlight was thrown on him last spring when he was selected by the Association of Military Surgeons of the United States to receive the Gorgas Award for 1949 "for outstanding contributions in the field of military medicine."

He is married, has three daughters, and lives at Arlington, Va. Although he says he has no hobbies, his friends say he has done a lot of riding and is an accomplished horseman.

H. Trendley Dean is one of those men who have found in the public service a format through which they can make maximum contributions to their professions, their country, and their fellow men. The Deans of America have set the highest standards in public service, and have put aside personal gain for the public good. Here is an excellent example of a man who is not a prisoner of professionalism but, through a breadth of vision and sound understanding, is able to relate the separate interests of several groups to the larger interests of the whole community, and to join all of these several interests in a democratic partnership of public and private endeavor whose fruitful efforts promise to make history for both dentistry and public health by raising the standards of dental health in America.

This is, indeed, public service of the highest order — in philosophy, in program, and in performance.

...e pictures are of a metal-shadowed collodion replica of a cross ...rough tooth enamel. The picture at the left was taken with an ...ight microscope at about 1,000 magnification. The picture at the ...taken with the electron microscope at 16,000 magnification. It shows ...e many enamel rods shown in the picture on the left. This work is ...ducted by Dental Surgeon Ralph A. G. Wyckoff, Laboratory of Phy... ...y, Experimental Biology and Medicine Institute.

Dentistry and General Health

By ROLLAND B. MOORE, D.D.S.

NOT MANY PEOPLE realize the extent to which their general health depends on the condition of their teeth and gums. They do not know, for example, that one of the most frequent causes of rheumatism is a blind abscess on a devitalized tooth and the constant drain of pus from it into their systems is the focal point of infection.

Not only rheumatism but arthritis, stomach trouble, weak eyes, defective hearing and some forms of heart trouble may be traced to the teeth. Dr. W. J. Manion of the Eye, Ear and Throat Hospital, New Orleans, has stated that missing teeth and poorly fitting dentures affect the hearing of three million people in the United States. He said experiments have proven this. We dentists know there have been cases of extraction of impacted teeth that have restored hearing.

Hearing Affected

Recently a father brought his nine-year-old son to my office. The boy was crying from the pain of a toothache. I found two temporary teeth were badly abscessed. I called the father's attention to the condition.

"Yes," he said, "he's been having gum boils on those two for more than a year."

I removed the teeth, then made a detailed examination of the boy's mouth. It was in deplorable condition, with twelve cavities in temporary and permanent teeth. The boy was wearing a hearing aid.

"No use to fix up those baby teeth," the father said. "He'll lose them pretty soon anyway, and it would just be a useless expense."

I believe that if that child's teeth had been made dentally fit, his hearing would have improved. He was a frail boy and had suffered many sick spells. You may be able to guess why he was sick so frequently.

I said to the father, "You like to have your boy come home from school with a good report card, don't you? You can't expect him to do good work in school with teeth like these. The pus from these teeth is going into his system all the time. For the sake of the boy's health, they should be taken care of."

"I can't afford it," the father replied. That ended the matter. It seemed to me that, by his own statement, he was admitting he couldn't afford to have children when he stated that he couldn't afford to safeguard his child's health.

Headaches

Last year a woman came to my office and said that, while she was visiting outside of the state, she had had tooth trouble and had gone to a dentist. He had devitalized two teeth and had filled them. Since then, she said, she had had an almost constant headache.

"Do you suppose that the dental work I had done is the cause of my headache?", she asked.

"That might be," I replied. "I'll X-ray them and see what condition the roots are in." The X-rays showed both teeth abscessed. I extracted them. In less than a week, the woman's headache disappeared, and has not returned.

Rheumatism

In my own case, a number of years ago – when it was common practice to devitalize posterior teeth with exposed nerves – I had five devitalized and filled. Later on I developed a bad case of rheumatism in my shoulder. I was unable to operate at the chair. I couldn't raise my arm.

My wife said, "I believe your teeth are causing your rheumatism."

I thought so too. I went to a dental friend and had those five devitalized teeth X-rayed. The films showed every one with a blind abscess. A week after they had been extracted, my rheumatism disappeared entirely.

Just the other day I examined a man and found nine bad roots and only four teeth with crown surfaces intact.

"I'll bet you have frequent attacks of rheumatism." I said to him.

"Indeed I do have," he replied. "But how did you know it?" Then he told that last winter he had rheumatism so badly he had been unable to

work. At the time of my examination he had a lame shoulder. I told him that rheumatism was frequently caused by bad teeth, and explained why. I removed his teeth, and the lameness in his shoulder disappeared.

Stomach Disorders

I remember the case of a tall, old farmer. "I came into town," he said, "to get some medicine from the doctor for my stomach. The first thing he said was, 'Open your mouth and let me see your teeth.' When I did, he said, 'You go right over to Dr. Moore and have that rotten mess of teeth out. Have him make you a pair of plates. You won't need stomach medicine after that.' So here I am."

This man had a bad set of teeth – abscessed roots, pyorrhoea, and a foul breath. I took out his teeth and made him upper and lower dentures. I didn't see him again for six months, at which time I met him on the street.

Jokingly I said, "Come into town for more stomach medicine?"

He laughed, "Since I had those cussed teeth out, I've had no more stomach trouble. Why, Doc, I feel a hundred per cent better – as good as I ever did in my life."

Mental Conditions

Superintendents of two state hospitals have told me they have noticed in many patients a great improvement in their mental condition when their teeth had been made dentally fit. Not only in their mental condition but in their general health as well.

Children's Dentistry

In many of the larger cities, school dentists are employed on a full-time basis. Generally speaking, the teeth of the children in large cities will be found to be in good condition. It is in the small towns where I have found the worst dental conditions among the children. Many parents do not understand the importance of dentistry for children. They don't want to pay to have temporary teeth taken care of. Not knowing that the first permanent molar erupts at the age of six years, they mistake it for a temporary tooth. If it develops caries, they let it go, believing it will be replaced by a permanent tooth. The result is that the tooth is lost. I have seen this happen again and again.

School teachers have told me that children with good teeth learn faster than those with poor teeth. They have noticed, also, that when a child's teeth have been put in good condition his school work improves and he becomes more alert.

Of the hundreds of children who have been brought to me with their school dental cards, one child, a nine-year-old boy, had the worst looking teeth I ever saw. Every tooth, temporary and permanent, was carious. Some had exposed live nerves and some had putrescent pulps. The boy's mother explained that she was too poor to spend any money on the boy.

It seems to me that in cases like this, where parents are unable to provide dental services for a child, the state should make some provision. The state provides free dental work for inmates of penal and mental institutions. Why not do as much for a child who has broken no laws and is mentally competent?

Poliomyelitis Theory

One of the latest theories regarding poliomyelitis is that, in many cases, the bacillus gained entry into the system through carious teeth in which were live and exposed nerves. This theory sounds plausible because poliomyelitis is a disease of the nerves which control the muscular system. If this theory is true, the occurrence of poliomyelitis might be greatly reduced if dental disabilities were eliminated.

The relationship between dental health and general health is obvious. It is our job, Doctor, to help our patients understand this important fact.

"LET ME THROUGH, PLEASE! MY HUSBAND'S A DENTIST."

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